

# Signal Technicians Conference

COMMUNICATION ISSUES  
900 MHz Wireless Radio

December 1, 2010

# Discussion Topics

- Current State Contract
- Software Version Update
- Scenario's Which Require Different Data Cables
  - CB 137 – Standard Standalone Radio System
  - CB 142 - Local Controller/Fiber to Radio
  - CB 196 - Master Controller/Fiber to Radio
  - CB ??? – ENCOM Master Radio to 2070 Local Controller and Local Fiber Transceiver  
(Connecting 2 fiber systems together)
- Drivers for Systems

# BID LIST ITEMS

NCDDOT DEPOT	VENDOR	MFG. PART NUMBER	MATERIAL DESCRIPTION	PRICE
651100105	RAI	Encom – 5200S	900 MHz Wireless Radio	\$907.00
651100110	Hutton Communications	HCI/RG50- NMTNMRP-72S	Radio Frequency Signal Jumper	\$11.71
651100120	Hutton Communications	Cushcraft – PC906N	YAGI - 8.5dB	\$32.51
651100130	Hutton Communications	Cushcraft – PC9013N	YAGI - 13dB	\$100.76
651100140	Hutton Communications	Cushcraft – S8963B	Omni – 3 dB	\$77.86

# BID LIST ITEMS

NCDDOT DEPOT	VENDOR	MFG. PART NUMBER	MATERIAL DESCRIPTION	PRICE
651100150	Hutton Communications	Antennex – FG9026	6dB - Omni	\$92.12
651100160	RAI	Pelco – SP-5799- 24-96-PNC	Antenna Mounting Hardware	\$108.28
651100170	Hutton Communications	Andrew – CNT 400	Coaxial Cable (500 FT Reel @ 0.49/FT)	\$245.00
651100180	Hutton Communications	Telewave – ANTP29	Coaxial Cable – Power Divider (Splitter) for Repeater Radio	\$113.04
651100190	RAI	Times Microwave – EZ-400-NMK	Standard N-Type Male Connector	\$11.25

# BID LIST ITEMS

NCDDOT DEPOT	VENDOR	MFG. PART NUMBER	MATERIAL DESCRIPTION	PRICE
651100200	Southeastern Safety Systems	Wireless Solutions- GK-38	Coaxial Cable Shield Grounding and Weatherproofing Kit	\$18.20
651100210	Southeastern Safety Systems	Southeastern Safety Systems - Tool Pouch	Crimping Kit	\$279.89
651100220	RAI	Polyphasier – DSXL with BFN Adapator	Lightning Arrestor - Polyphasier	\$100.89

# SPECIAL ORDER ITEMS

NCDDOT DEPOT	VENDOR	MFG. PART NUMBER	MATERIAL DESCRIPTION	PRICE
Special Order Item	ENCOM	ENCOM – CB 142	Y-DATA CABLE From Fiber Transceiver to ENCOM Radio and 270 Controller	\$140.00
Special Order Item	ENCOM	ENCOM – CB 196	Y-DATA CABLE From Master 2070 Controller to Fiber Transceiver and ENCOM Master Radio	\$140.00
Special Order Item	ENCOM	ENCOM – CB 172 / CB DOT MUST BE SENT TO TRAFFIC ELECTRONICS SHOP TO BE REWORKED	Y-DATA CABLE From ENCOM Master Radio to 2070 Local Controller and Local Fiber Transceiver	\$140.00

# Obtaining ENCOM Software

- Encom Web Address

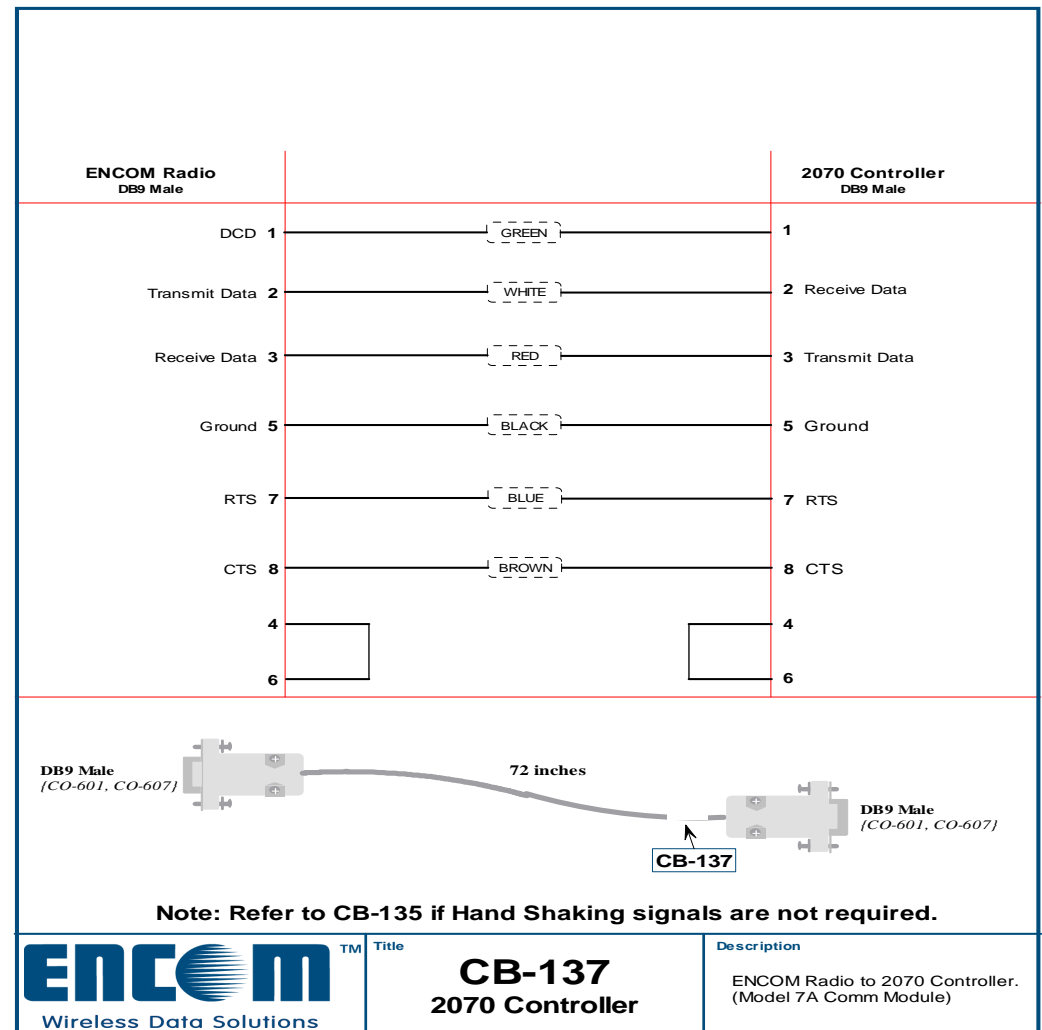
*[www.encomwireless.com](http://www.encomwireless.com)*

Then go to “TOP DOWNLOADS” to get ControlPak Software (Version 4.3.13)

- To update the firmware on the radio go to the “ABOUT” tab and click “Radio Firmware Upgrade” (Version 4.28e)
- Radio Firmware will be automatically downloaded to radio

# CB 137 Cable

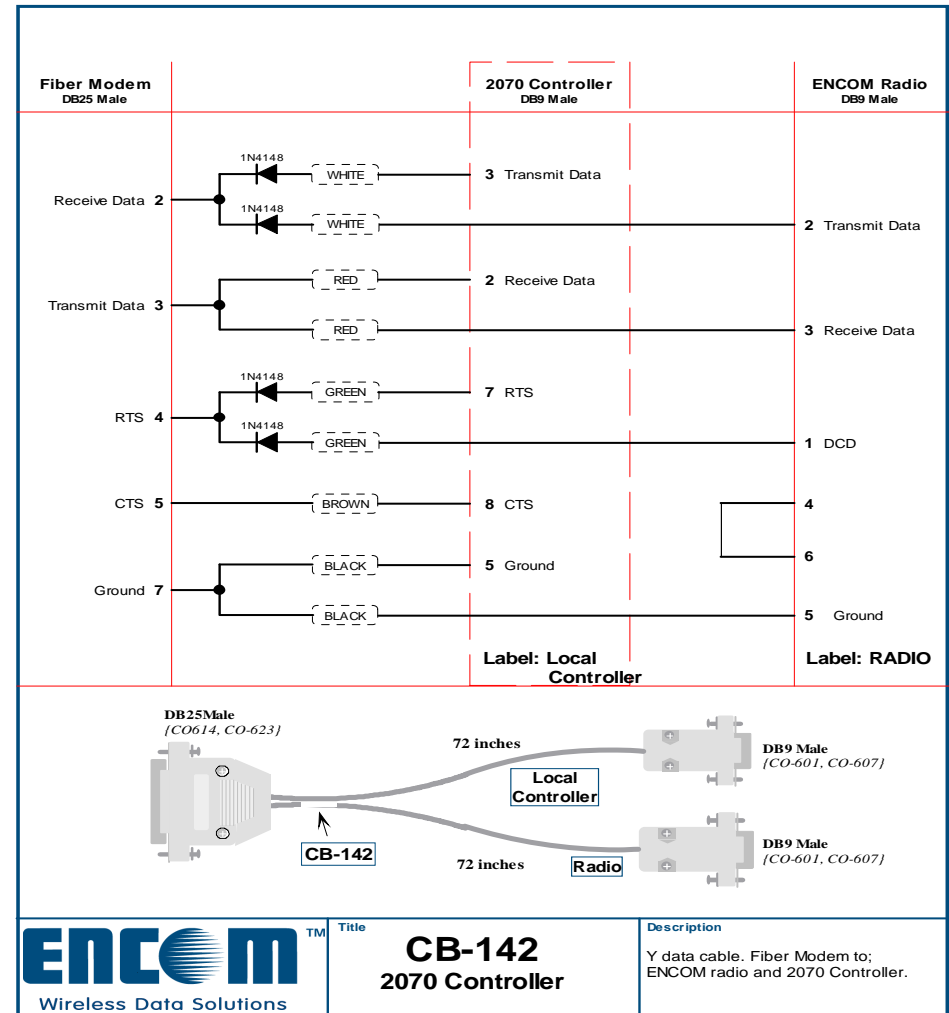
- Standard Cable
- Comes with Radio when order off of State Bid
- Used to connect standalone radios together





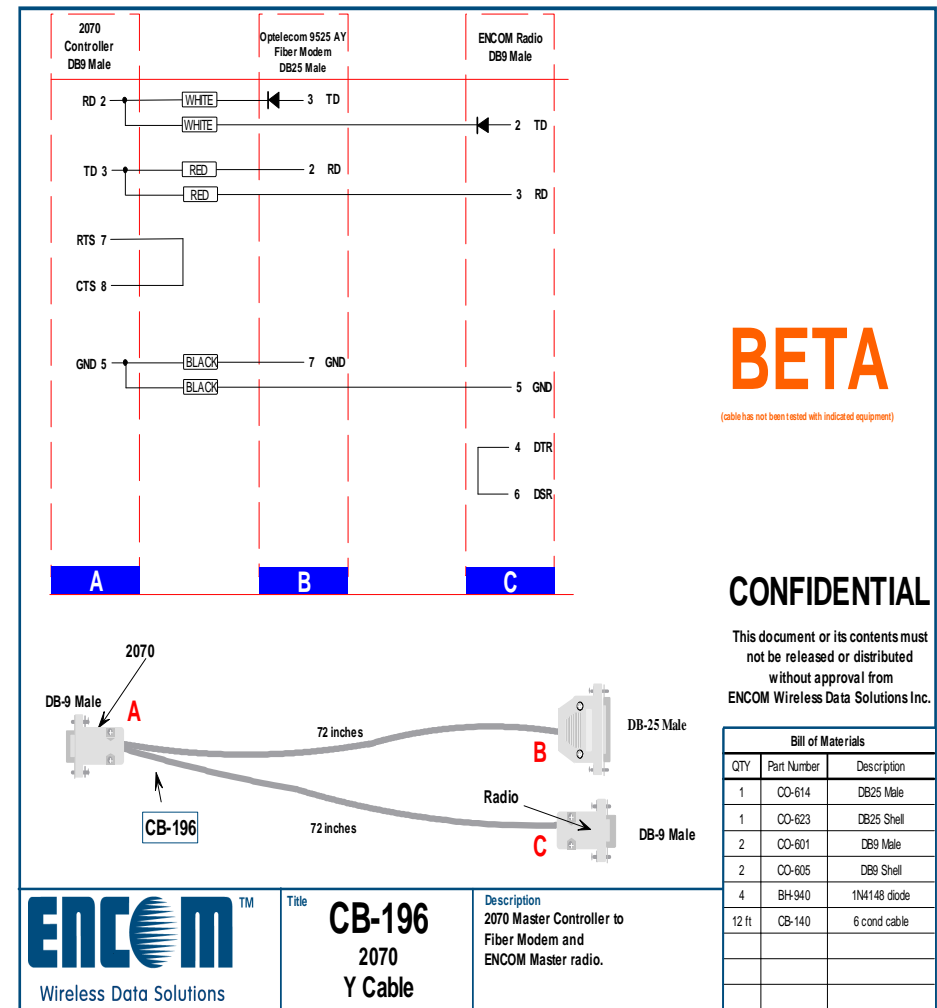
# CB 142

- SPECIAL ORDER CABLE
- Used for:  
Local Controller with  
Fiber Transceiver to  
Jump to Radio



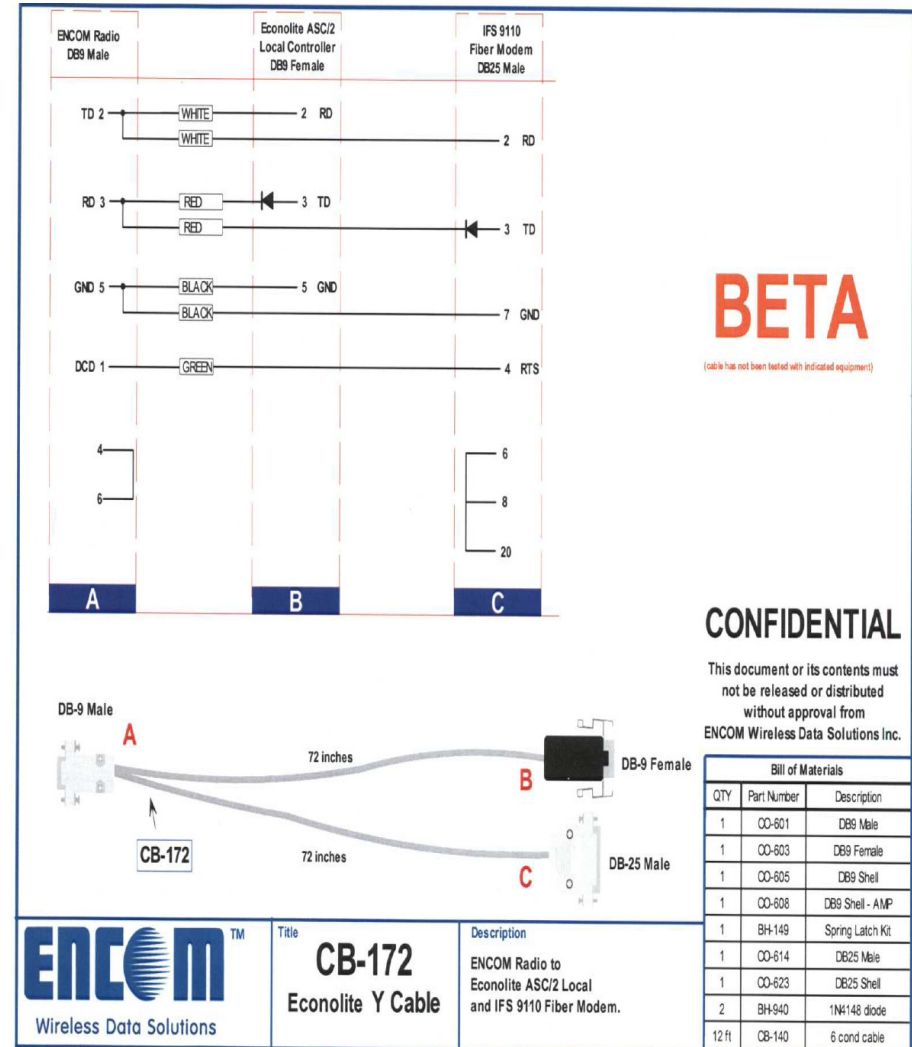
# CB 196

- SPECIAL ORDER CABLE
- Used for:  
Master Controller with  
Fiber Transceiver to  
Jump to Radio



# CB 172 for Conversion to CB-dot

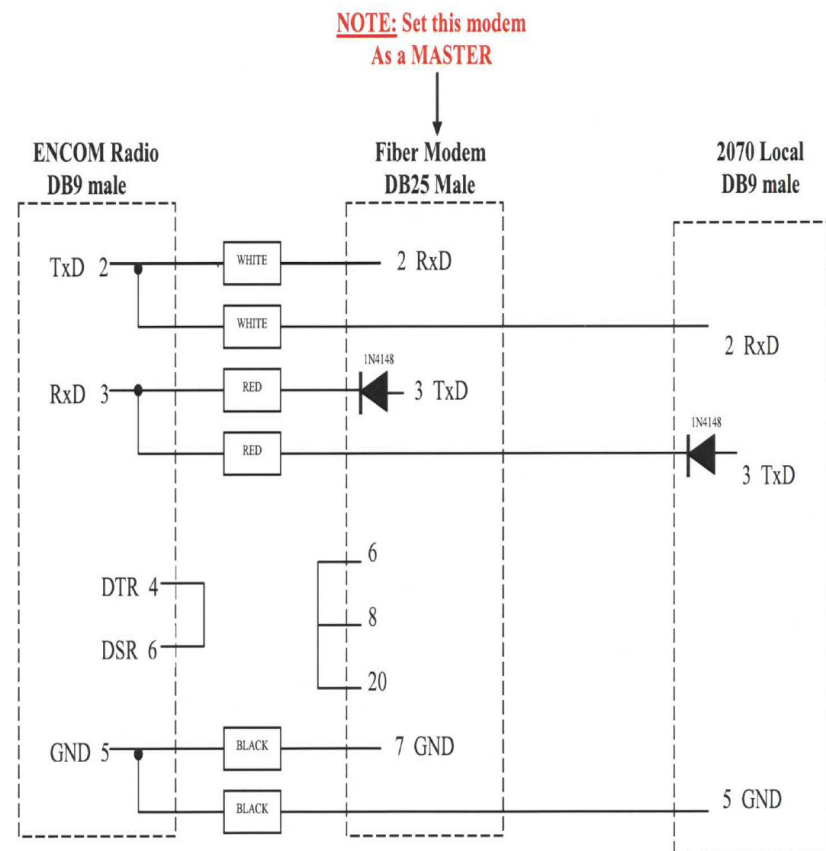
- **SPECIAL ORDER CABLE**
- **ORDER ENCOM CB 172 Cable**
- **Used for:**  
**Local Radio to connect with a Local Controller and Local Fiber Transceiver**
- **Send the CB 172 Cable to Traffic Electronics Center to have Reworked**



# CB-dot CABLE

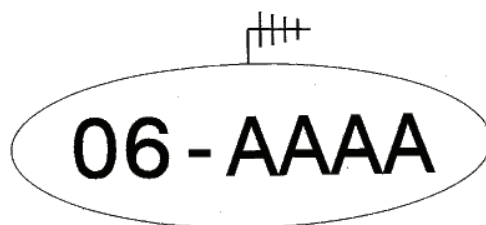
- Send the CB 172 Cable to Traffic Electronics Center to have Reworked for:  
Local Radio to connect with a Local Controller and Local Fiber Transceiver  
(NOTE: Must Change Fiber Transceiver to Master Setting)

ENCOM Radio to 2070 Local Controller and Fiber Modem

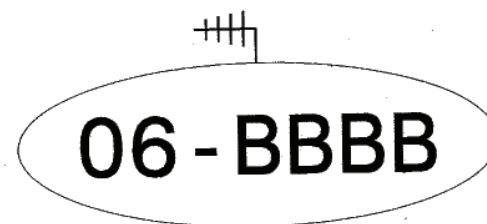


# STANDARD RADIO SYSTEM

ENCOM "CB 137" DATA CABLE ASSEMBLY



MASTER CONTROLLER  
ENCOM RADIO  
w/CABLE ASSEMBLY "CB-137"  
\* PROGRAM RADIO AS  
A MASTER RADIO



LOCAL CONTROLLER  
ENCOM RADIO  
w/CABLE ASSEMBLY "CB-137"  
\* PROGRAM RADIO AS  
A LOCAL RADIO

SHEET #1

## ENCOM "CB 142" DATA CABLE ASSEMBLY

MASTER CONTROLLER

06 - AAAA

FO

FO

FO

06 - BBBB

STAND ALONE RADIO  
(See "SHEET #4")

—OR—

FIBER SYSTEM  
(See "SHEET #4")

LOCAL CONTROLLER w/FIBER OPTIC TRANSCEIVER  
ENCOM RADIO w/CABLE ASSEMBLY "CB 142"  
\* PROGRAM RADIO AS A MASTER RADIO

**SHEET #2**

## ENCOM "CB 196" DATA CABLE ASSEMBLY

LOCAL CONTROLLER

06 - AAAA

F0

F0

F0

06 - BBBB

STAND ALONE RADIO  
(See "SHEET #4")

—OR—

FIBER SYSTEM  
(See "SHEET #4")

MASTER CONTROLLER w/FIBER OPTIC TRANSCEIVER  
ENCOM RADIO w/CABLE ASSEMBLY "CB 196"

- \* PROGRAM RADIO AS A MASTER RADIO
- \* PROGRAM F.O. TRANSCEIVER AS A  
MASTER TRANSCEIVER

SHEET #3

## REFERENCE

ENCOM "CB 137"  
DATA CABLE ASSEMBLY

— OR —

ENCOM "CB 142"  
DATA CABLE ASSEMBLY

— OR —

ENCOM "CB 196"  
DATA CABLE ASSEMBLY

STAND ALONE RADIO



06 - CCCC

LOCAL CONTROLLER

ENCOM RADIO w/CABLE ASSEMBLY "CB-137"  
\* PROGRAM RADIO AS A LOCAL RADIO

FIBER SYSTEM



06 - DDDD

LOCAL CONTROLLER

06 - EEEE

F0

F0

LOCAL CONTROLLER

ENCOM RADIO w/CABLE ASSEMBLY

"CB-172" CONVERTED TO "CB-dot"

\* PROGRAM RADIO AS A LOCAL RADIO

\* PROGRAM F.O. TRANSCEIVER AS A  
MASTER TRANSCEIVER

SHEET #4



The following identifies how to locate the drivers for use with all 2070L closed loop systems running Enconolite's OASIS software on NCDOT systems.

From the "LOCAL CONFIGURATION" menu, click on the "DRIVERS" tab. Under Step 1 select "ADDITIONAL DRIVERS".

LOCAL CONFIGURATION – menu

ADDITIONAL DRIVERS

Central Traffic Management Systems

Econolite Translink 32 Closed Loop Software

Translink 32 with ATC 2070 OASIS

No Repeater [\(VIEW "A" DRIVERS\)](#)

Translink 32 with 19.2Kbps Modem.enc

....

With 1 Repeater Level [\(VIEW "B" DRIVERS\)](#)

Translink 32 with 19.2Kbps Modem.enc

....

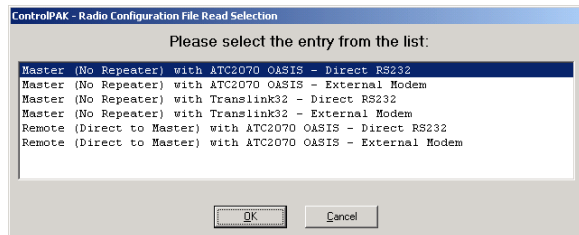
With 2 Repeater Level [\(VIEW "C" DRIVERS\)](#)

Translink 32 with 19.2Kbps Modem.enc

[\(VIEW "A", VIEW "B" , VIEW "C" – Drivers listed below\)](#)

## (VIEW “A” DRIVERS)

1. Master (No Repeater) with ATC2070 OASIS – Direct RS 232
2. Master (No Repeater) with ATC2070 OASIS – External Modem
3. Master (no Repeater) with Translink32 – Direct RS 232
4. Master (No Repeater) with Translink32 – External Modem
5. Remote (Direct to Master) with ATC2070 OASIS – Direct RS 232
6. Remoter (Direct to Master) with ATC2070 OASIS – External Modem

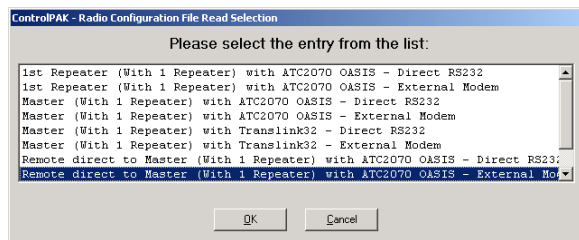


...

...

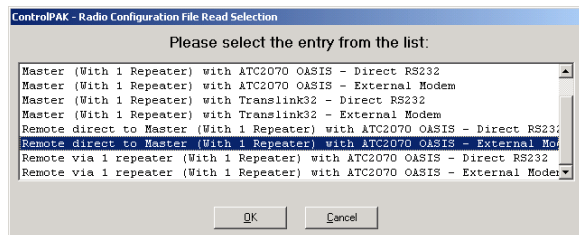
## (VIEW “B” DRIVERS)

1. 1<sup>st</sup> Repeater (with 1 Repeater) with ATC2070 OASIS – Direct RS 232
2. 1<sup>st</sup> Repeater (With 1 Repeater) with ATC2070 OASIS – External Modem
3. Master (With 1 Repeater) with ATC2070 OASIS – Direct RS 232
4. Master (With 1 Repeater) with ATC2070 OASIS – External Modem
5. Master (With 1 Repeater) with Translink32 – Direct RS 232
6. Master (With 1 Repeater) with Traanslink32 – External Modem
7. Remote direct to Master (with 1 Repeater) with ATC2070 OASIS – Direct RS 232
8. Remote direct to Master (with 1 Repeater) with ATC2070 OASIS – External Modem
9. Remote Via 1 repeater (With 1 Repeater) with ATC 2070 OASIS – Direct RS 232
10. Remote Via 1 repeater (With 1 Repeater) with ATC 2070 OASIS – External Modem



..

..



...

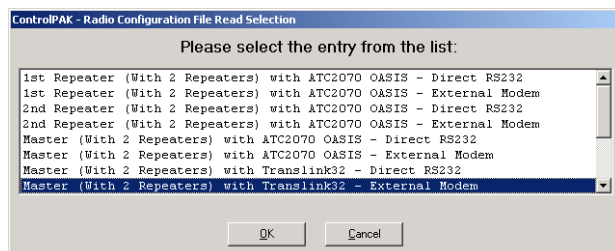
...

## (VIEW “C” DRIVERS)

1. 1<sup>st</sup> Repeater (With 2 Repeaters) with ATC2070 OASIS – Direct RS 232
2. 1<sup>st</sup> Repeater (With 2 Repeaters) with ATC2070 OASIS – External Modem
3. 2nd Repeater (With 2 Repeaters) with ATC2070 OASIS – Direct RS 232
4. 2nd Repeater (With 2 Repeaters) with ATC2070 OASIS – External Modem
5. Master (With 2 Repeaters) with ATC2070 OASIS – Direct RS 232
6. Master (With 2 Repeaters) with ATC2070 OASIS – External Modem
7. Master (With 2 Repeaters) with Translink32 – Direct RS 232
8. Master (With 2 Repeaters) with Translink32 – External Modem
9. Remote Direct to Master (With 2 Repeaters) with ATC2070 OASIS – Direct RS 232
10. Remote Direct to Master (With 2 Repeaters) with ATC2070 OASIS – External Modem
11. Remote via 1 repeater (With 2 Repeaters) with ATC2070 OASIS – Direct RS 232
12. Remote via 1 repeater (With 2 Repeaters) with ATC2070 OASIS – External Modem
13. Remote via 2 repeaters (With 2 Repeaters) with ATC2070 OASIS – Direct RS 232
14. Remote via 2 repeaters (With 2 Repeaters) with ATC2070 OASIS – External Modem

...

...



...

...

